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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/421,417 | 10/19/1999 | RUSTIN W. ALLRED | TI-29327 | 4125 |

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| EXAMINER | |
|---|---|
| GRIER, LAURA A | |
| **ART UNIT** | **PAPER NUMBER** |
| 2644 | |

DATE MAILED: 10/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/421,417 | ALLRED, RUSTIN W. | |
| | Examiner | Art Unit | |
| | Laura A Grier | 2644 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,11,12,14,15,21-25 and 28-30* is/are rejected.

7)☒ Claim(s) *4-10,13,16-20,26,31 and 32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 October 1999* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

**DETAILED ACTION**

***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 10/19/99 has been considered by the examiner.

***Specification***

2. The disclosure is objected to because of the following informalities: because the serial or application numbers are missing from the non-provisional applications listed in the specification on page 1. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 11-12 and 21-23** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 recites the limitation "the filter gain" in line 6 and line 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "the filter gain" in line 8 and line 11. There is insufficient antecedent basis for this limitation in the claim.

Claim 21 recites the limitation "the filter gain" in line 6 and line 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 22 recites the limitation "the filter gain" in line 8 and line 11. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 23, it depends from claim 22.

Regarding claims 11-12, and 21-23, the claim language, "the filter gain" renders the claim indefinite as whether another filter is being claimed in independent claims 1 and 14 besides the compensation filter.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. **Claims 1-3, 14-15 and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kramer, U. S. Patent No. 4991218 in view of Stockman, Jr. et al., U. S. Patent No. 5500902.

Regarding claims 1 and 3, Kramer inherently discloses level sensor a estimating the level of the audio signal as evident by the audio input signal into and function of the sample and hold circuit, thereto (col. 9, lines 12-25); and discloses a digital signal processor for timbral change in arbitrary audio and dynamically controlled stored digital audio signals. Kramer's disclosure comprises an audio input signal, which reads on receiving and input, Look-Up Table (LUT) – 103, in which slope and offset inputs are applied via pre-scale and post-scaling, which reads on

mapping, and the signal is output via post-filter (105) to amplifier for generating an audio output signal (figures 1, 2a and 7a, col. 4, lines 56 –col. 5, lines 1-12, col. 6, lines 47-54, col. 10, lines 1-10, col. 12, lines 46-68). However, Kramer fails to disclose a compensation filter, therein as claimed.

Regarding the compensation filter, Stockham, Jr. et al., (herein, Stockham) discloses an compensation system ultilizing audio bandpass filters (14-1), wherein the bandpass filters (claim 3) are optimal function is performed in regards to center frequencies, bandwidth (col. 5, lines 16-28), which indicates a compensation filter, therein.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Kramer by a raw audio gain input to a bandpass filter for purpose of providing optimal and high fidelity sound compensation for an audio signal output.

Regarding claims 14 and 15, Kramer inherently discloses level sensor a estimating the level of the audio signal as evident by the audio input signal into and function of the sample and hold circuit, thereto (col. 9, lines 12-25); and discloses a digital signal processor for timbral change in arbitrary audio and dynamically controlled stored digital audio signals. Kramer's disclosure comprises an audio input signal, which reads on receiving and input, Look-Up Table (LUT) – 103, in which slope and offset inputs are applied via pre-scale and post-scaling, which reads on mapping, and the signal is output via post-filter (105) to amplifier for generating an audio output signal (figures 1, 2a and 7a, col. 4, lines 56 –col. 5, lines 1-12, col. 6, lines 47-54, col. 10, lines 1-10, col. 12, lines 46-68). Kramer obviously indicates a volume control input by user as evident merely by the audio signals are from an audio source such as CD player (col. 6,

lines 60-65), and further more with the computer interface editing and modifying capabilities it would have been obvious for a sound engineer or one skilled in the art to apply the slope and offset inputs for the purpose of providing real-time manipulations for dynamic audio control. However, Kramer fails to disclose a compensation filter, therein as claimed.

Regarding the compensation filter, Stockham, Jr. et al., (herein, Stockham) discloses an compensation system ultilizing audio bandpass filters (14-1), wherein the bandpass filters (claim 15) are optimal function is performed in regards to center frequencies, bandwidth (col. 5, lines 16-28), which indicates a compensation filter, therein.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Kramer by a raw audio gain input to a bandpass filter for purpose of providing optimal and high fidelity sound compensation for an audio signal output.

Regarding claims 2 and 24, Kramer discloses everything claimed as applied (see Claims 1 and 14, respectively). Kramer inherently discloses the use of an attack and decay filter as evident of the fact that smoothed output is provided to the output of the audio device.

7. **Claims 25 and 28-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kramer.

Regarding claim 25, Kramer discloses a digital signal processor for timbral change in arbitrary audio and dynamically controlled stored digital audio signals. Kramer's disclosure comprises an audio input signal, which reads on receiving and input, Look-Up Table (LUT) –

103, in which slope and offset inputs are applied via pre-scale and post-scaling, which reads on mapping, and the signal is smoothed and output via post-filter (105) to amplifier for generating an audio output signal (figures 1, 2a and 7a, col. 4, lines 56 –col. 5, lines 1-12, col. 6, lines 47-54, col. 10, lines 1-10 and col. 12, lines 46-68). However, Kramer fails to specifically disclose the filter as an all-pass filter. The examiner takes official notice that the use of all-pass filters were well known in the art. Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Kramer by implementing an all-pass filter for the purpose of varying phase of signal which may have shifted during prior processing of the audio signal.

Regarding claim 28, Kramer discloses everything claimed as applied (see claim 25). Kramer indicates the input signal as an audio input signal (figure 1), which may obviously indicate a volume control input by user as evident merely by the audio signals are from a audio source such as CD player (col. 6, lines 60-65).

Regarding claims 29-30, Kramer discloses everything claimed as applied (see claim 25). Kramer discloses an audio input signal (figure 1) and inherently discloses a estimating the level of the audio signal as evident by the function of a sample and hold circuit (col. 9, lines 12-25).

***Allowable Subject Matter***

8. **Claims 4-10, 13, 16-20, 26 and 31-32** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Prior Art***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Allred, U.S. Patent No. 6289367 discloses digital signal processing circuits, systems, and method implementing approximations for logarithm and inverse logarithm.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura A Grier whose telephone number is (703) 306-4819. The examiner can normally be reached on Monday - Friday, 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Laura A. Grier
October 1, 2004